Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

TITLE V (DRAFT PERMIT) NO. V-03-043 REVISION 1
THE FREEMAN CORPORATION
WINCHESTER, KY
MAY 27, 2006
MASSOUD KAYVANJAH, REVIEWER
SOURCE I.D. #: 21-049-00004
SOURCE AI#: 811
ACITIVITY #: APE20060001

CURRENT PRMITTING ACTTION: V-03-043 R1

The Division received the application for installation of two cyclones (#3 and #4)) on February 27, 2006. Cyclone #3 with 77% collection efficiency receives wood processing particulate emissions from emission units EU14b, EU16, and EU18-EU20; and cyclone #4 receives wood processing particulate emissions from emission unit EU32. There will be no significant change in emissions from the addition of these control devices.

APPLICABLE REGULATIONS:

Each emissions unit is subject to 401 KAR 59:010, Section 3(2). Particulate matter emissions into the open air shall not exceed $[3.59(P)^{0.62}]$ lbs/hour, where P is the processing rate in tons/hour. Pursuant to 401 KAR 59:010, Section 3(1)(a), any continuous emissions into the open air shall not equal or exceed 20% opacity based on a six-minute average.

The permittee shall monitor and record the production rate of sawdust and the production rate of bark from each emission unit on a monthly basis.

PAST PERMITTING ACTION- V-03-043:

The Division received a source-wide operating/construction permit application on August 7, 2001. The proposed construction was for an insignificant emission unit, EU-29, an Omeco wood dryer, and a significant emission unit, EU-13, a 28.7 mmBtu/hr Hurst wood boiler. The proposed dryer is under construction, and the proposed boiler has not been purchased, to date. A letter was sent by DAQ on August 7, 2001 notifying the facility that the application was received and would be deemed complete within 60 days (October 7, 2001), if there were no deficiencies. On February 11, 2004, DAQ received additional information from the Freeman Corporation requesting a synthetic minor limit to avoid PSD.

The facility manufactures wood veneer products. Hardwood logs are stored, wetted, debarked, and trimmed before slicing operations to make veneer. Waste wood products are combusted in wood boilers. Heat from the boilers is used by dryers to dry the veneer.

The facility is a major source for carbon monoxide (CO) emissions and particulate matter less than 10 microns (PM_{10}). The source also has the potential to emit greater than 250 tons/yr of particulate matter (PM) and PM_{10}, as noted in Tables A-3 and A-4 of section 5 in the application. As a self imposed restriction to preclude the applicability of 401 KAR 51:017, the sum of all non-fugitive PM emissions from all existing sources prior to the application completion date of October 7, 2001(emission units 05, 07-35) shall not exceed 240 tons/yr during any consecutive twelve (12) month rolling total. The sum of all non-fugitive PM_{10} emissions, from all existing sources prior to the application completion date of October 7, 2001, shall not exceed 240 tons/yr during any consecutive twelve (12) month rolling total.

The following is a list of significant emission units.

E. Unit 05	Lumber Yard Boiler
E. Unit 07	Veneer Clipping Lines #1, #2, and #3
E. Unit 08	Dry Veneer Chipper
E. Unit 09	Indirect heat Exchanger
E. Unit 10	Haul Roads and Log Yard
E. Units 11, 12, 13, and 15	Wood-fired Boilers
E. Unit 14	Two Flitch Sawgplans and Two Debarkers
E. Unit 18	Skinning Line
E. Unit 19	Flitch Cut-off Saw
E. Unit 20	Flitch Planing and Grooving
E. Unit 26	Flitch Rip Saw
E. Units 30 and 31	Bolt Cut-off Saw and Round-up Lathe
E. Unit 40	Sawdust Unloading from Truck into Silo
E. Unit 41	Sawdust Unloading from Silo
E. Unit 42	Veneer Chips Unloading from Storage to Boilers

Sect. D of Permit V-03-043 Existing units (pre - October 7, 2001) PM limits

COMMENTS:

E. Unit 05: Lumber Yard Boiler

A 4.0 mmBtu boiler was installed in 1989 and is located in the lumber yard. The unit is designed to combust natural gas or distillate fuel, but has not been operated for over 10 years. No controls are on the unit.
401 KAR 59:015 applies to the unit. Particulate emissions shall not exceed 0.48 lb/mmBtu, based on the existing operating permit O-94-010. Emissions shall not exceed 20% opacity, and sulfur dioxide emissions shall not exceed 2.29 lb/mmBtu. The total rated heat input capacity of all affected facilities at the source (EU-05, EU-9, EU-11, EU-12, EU-13, and EU-15) is 89.7 mmBtu/hr.
While burning natural gas, this unit is considered to be in compliance with the PM, SO_2, and opacity standards. While burning distillate fuel oil, compliance will be demonstrated by emissions based on AP-42, Section 1.3 emission factors and qualitative visual observations of the opacity of emissions from the stack on a weekly basis. When the unit is burning distillate fuel oil, the permittee shall determine the opacity of emissions from the stack using U.S. EPA Reference Method 9 upon request by the Division.

E. Unit 07 Veneer Clipping Lines #1, #2, and #3
E. Unit 08 Dry Veneer Chipper

Thin layers of veneer are clipped in three clipping lines consisting of various clipper equipment and conveyors. There is also a hog/chipper for emission unit EU-07 and a hog/chipper for emission unit EU-08 for the waste veneer clippings. All equipment is indoors. Veneer clipping waste from each hog/chipper is transported by vacuum to a high efficiency centrifugal collector, which feeds the wood waste products to a storage bin for later combustion by the wood boilers.
401 KAR 59:010, New process operations, is applicable to the emissions units. The units were installed in 1979. Particulate emissions shall not exceed $[3.59(P)^{0.62}]$ lbs/hour, where P is the processing rate in tons/hour. Emissions shall not exceed 20% opacity.

For emission reporting and fee purposes, the following emission factors shall be used based on facility engineering judgement: 0.6 lbs PM/ton of veneer clippings processed for emission unit EU-07; and 1.99 lbs of PM/ton of veneer clippings processed for EU-08.

The permittee shall monitor and record the veneer clippings production rate on a monthly basis. The permittee shall determine the opacity of emissions from the stack using U.S. EPA Reference Method 9 annually, and perform a qualitative visual observation of the opacity of emissions from the stack on a weekly basis.

E. Unit 10 Haul Roads and Log Yard

Regulation 401 KAR 63:010 for fugitive emissions will apply to paved and unpaved plant roads and the unpaved log yard. Loaders and log trucks are the primary users of the unpaved roads. No person shall cause, suffer, or allow any material to be handled, processed, transported, or stored without taking reasonable precaution to prevent particulate matter from becoming airborne. No person shall cause or permit the discharge of visible fugitive dust emissions beyond the lot line of the property on which the emissions originate.

Methods to assure compliance with the fugitive emission limitation may include the application and maintenance of asphalt, oil, water, or suitable chemicals on roads, washing of paved roadways and washing of vehicles and vehicular tires before exiting the facility, if necessary.

The emission factors are based on AP-42 emission factors for paved and unpaved roads. The facility shall maintain records of the calculations to determine the fugitive emissions from paved and unpaved roads with all data used in the calculations.

E. Units 11, 12, 13, and 15 Wood-fired Boilers

Emission units EU-11, EU-12, and EU-15 are existing wood-fired boilers, installed in 1991, 1991, and 1995, respectively. The rated heat input capacity of emission unit EU-11 is 12 mmBtu/hr. Emission units EU-12 and EU-15 have ratings of 10 mmBtu/hr and 28.7 mmBtu/hr. Emission unit EU-13 is a proposed emission unit with a rating of 28.7 mmBtu/hr.

Pursuant to KAR 59:015, particulate emissions shall not exceed the following: 0.428 lb/mmBtu for Emission Unit 11; 0.397 lb/mmBtu for Emission Unit 12; 0.359 lb/mmBtu for Emission Unit 15; and 0.334 lb/mmBtu for proposed Emission Unit 13. Emissions shall not exceed 20% opacity. Pursuant to KAR 59:015, sulfur dioxide emissions shall not exceed the following: 3.01 lbs/mmBtu for Emission Unit 11; 1.91 lbs/mmBtu for Emission Unit 12; 2.17 lbs/mmBtu for Emission Unit 15; and 1.89 lb/mmBtu for proposed Emission Unit 13. The total rated heat input capacity of all affected facilities at the source (emission units EU-05, EU-09, EU-11, EU-12, EU-13, and EU-15) is 89.7 mmBtu/hr.

40 CFR 40 Subpart Dc also applies to each unit.

Compliance with the PM and sulfur dioxide emission limits will be demonstrated by the calculated emissions, based on AP-42, Section 1.6 emission factors, except for PM emission factors for emission units EU-13 and EU-15. They will be based on a post control emission factor of 0.20 lbs PM/mmBtu, based on manufacturer testing of similar units. The manufacturer-tested units had multi-cyclones on the units for control of PM.

Qualitative visual observations of the opacity of emissions from the stack will be monitored and recorded from each stack on a weekly basis. When the unit is in operation, the permittee shall determine the opacity of emissions from each stack using U.S. EPA Reference Method 9 monthly, or more frequently if requested by the Division. The permittee shall monitor and record the amount of wood material combusted from each wood boiler on a monthly basis.

E. Unit 14 Two Flitch Sawgplans and Two Debarkers
E. Unit 19 Flitch Cut-off Saw
E. Unit 20 Flitch Planing and Grooving
E. Unit 26 Flitch Rip Saw
E. Units 30 and 31 Bolt Cut-off Saw and Round-up Lathe

Logs are wetted out in the log yard by automatic sprayers before processing in the veneer mill. Wet logs are debarked outside and planed inside. Bolts are cut to the desired length indoors.

Each unit is subject to 401 KAR 59:010, Section 3(2). Particulate matter emissions into the open air shall not exceed [$3.59(P)^{0.62}$] lbs/hour, where P is the processing rate in tons/hour. Pursuant to 401 KAR 59:010, Section 3(1)(a), any continuous emissions into the open air shall not equal or exceed 20% opacity based on a six-minute average.

For compliance with the PM emission limit, the following emission factors shall be used: 3.16 lbs PM/ton of sawdust or bark produced for emission unit EU-14; 0.0559 lb PM/ton of sawdust/end slivers produced for emission unit EU-19; 0.668 lbs of PM/ton of planer shavings produced for emission unit EU-20; 1.99 lbs of PM/ton of wood chips produced for emission unit EU-26, 1.00 lbs of PM/ton of sawdust for emission unit EU-30; and 1.5 lbs of PM/ton of bark produced for emission unit EU-31. Emission factors were calculated based on the maximum sawdust or bark produced from each unit from facility engineering judgement. For compliance with visible emissions limit, compliance will be assumed for the units located in the veneer mill building and for the outside debarking, due to the veneer process of wetting the logs prior to the debarking.

The permittee shall monitor and record the production rate of sawdust and the production rate of bark from each emission unit on a monthly basis.

E. Unit 18 Skinning Line

Air angle grinders are used to skin logs on a conveyor system. The operation is indoors. Emission unit EU-18 is an existing process operation subject to 401 KAR 61:020. Particulate matter emissions into the open air shall not exceed [$4.10(P)^{0.67}$] lbs/hour, where P is the processing rate in tons/hour. Pursuant to 401 KAR 59:010, Section 3(1)(a), visible emissions from a control device or stack shall not equal or exceed 40% opacity based on a six-minute average. For compliance with the PM emission limit, an emission factor of 0.106 PM/ton of material processed through the unit shall be used, based on facility engineering judgement. The permittee shall monitor and record the material processing rate and hours of operation on a monthly basis.

E. Unit 40 Sawdust Unloading from Truck into Silo
E. Unit 41 Sawdust Unloading from Silo
E. Unit 42 Veneer Chips Unloading from Storage to Boilers

Veneer chips from a storage bin are mixed with sawdust outside and conveyed in a partial enclosure to one of the wood boilers. Pursuant to 401 KAR 63:010, Section 3, discharge of visible fugitive dust emissions beyond the property line is prohibited. Compliance will be demonstrated by good operating procedures and may include the installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials, or the use of water sprays or other measures to suppress the dust emissions during handling.

Sect. D of Permit V-03-043 Existing units (pre - October 7, 2001) PM limits

To preclude the applicability of 401 KAR 51:017, the sum of all non-fugitive PM emissions from all existing sources prior to the application completion date of October 7, 2001 shall not exceed 240 tons/yr during any consecutive twelve (12) month rolling total. The sum of all non-fugitive PM_{10} emissions, from all existing sources prior to the application completion date of October 7, 2001,

shall not exceed 240 tons/yr during any consecutive twelve (12) month rolling total.

Compliance will be demonstrated by the maintaining of records of the monthly PM and PM_{10} emissions from all non-fugitive existing sources. Records will include a summary of the 12-month rolling average.

Regulations not applicable:

401 KAR 51:017 is not applicable due to the federally enforceable limit taken on PM and PM_{10} emissions from existing non-fugitive PM sources, as noted in Section D above.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.

S:\Combust\Massoud\Freeman Corporation